



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/623,288

07/17/2003

Walter E. Lillo

D-426

4128

7590 04/16/2007
Carole A. Mulchinski
The Aerospace Corporation
2350 East El Segundo Boulevard
Mail Stop M1/040
El Segundo, CA 90245

EXAMINER

MALEK, LEILA

ART UNIT

PAPER NUMBER

2611

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
--	-----------	---------------

3 MONTHS

04/16/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/623,288	Applicant(s) LILLO, WALTER E.	
	Examiner Leila Malek	Art Unit 2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 3, 4 and 6 is/are allowed.
- 6) ☒ Claim(s) 1 and 2 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is in response to the amendments submitted on 01/22/2007.

Specification

2. The disclosure is objected to because of the following informalities: The specification contains numerous typos and errors. The specification needs to be revised. For instance on page 2, line 1, sequence has been spelled as "sequ nce".

Claim Objections

3. Claim 5 is objected to because of the following informalities: as to claim 5, "first code receiver" needs to be replaced by "first code receivers". Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Syrjarinne et al. (hereafter, referred as Syrjarinne) (US 2003/0090414) and Bruckert (US 5,786,791), further in view of Schulz (US 6,611,511).

As to claim 1, Syrjarinne discloses a receiver (see Fig. 1, block 1) for receiving a channel signal having a modulated carrier (see paragraphs 0001 and 0003) for communicating first messages (i.e. signals transmitted from a first transmitter have been

Art Unit: 2611

interpreted as first messages) using a first spreading code (i.e. an individual code for the first transmitter) and communicating second messages (i.e. signals transmitted from a second transmitter have been interpreted as second messages) using a second spreading code (i.e. an individual code for the second transmitter), the receiver comprising: a first replica spreading code generator providing a first replica spreading code (see the abstract and paragraphs 0001, 0004, 0007, and 0015), a second replica spreading code generator providing a second replica spreading code (see the abstract and paragraphs 0001, 0004, 0007, and 0015), a first despreader (see the abstract and paragraphs 0001, 0007, 0008, and 0015) for despreading the channel signal into a first despread signal, a second despreader (see the abstract and paragraphs 0001, 0007, 0008, and 0015) for despreading the channel signal into a second despread signal, a first power detector (see the abstract, paragraphs 0015 and 0017) for detecting the power level of the first signal (i.e. determining signal level of each channel) for providing a first power signal, a second power detector (see the abstract, paragraphs 0015 and 0017) for detecting the power level of the second signal for providing a second power signal, a comparator for determining which one of the first or second power signal is present (see paragraphs 0036 and 0037), and a selector (see paragraph 0037) for selecting and providing the first signal when the first power signal is present or for selecting and providing the second signal when the second power signal is present, the first signal comes from the first transmitter (i.e. interpreted as the first signal contains the first message) when the first power signal is present, the second signal comes from the second transmitter (i.e. interpreted as the second signal contains the second

message) when the second power signal is present. Syrjarinne discloses all the subject matters claimed in claim 1, except for having a first carrier demodulator for carrier demodulating the first despread into first quadrature signals, a second carrier demodulator for carrier demodulating the second despread into second quadrature signals. Bruckert, in the same field of endeavor, discloses a method for determining remote unit location in a communication system. Bruckert discloses a receiver comprising two receiving antennas (see Fig. 3, blocks 103 and 105), wherein signals 340 and 341 are input into despreaders 321 and 327 respectively, where they are despread and output as despread signals 342 and 343 to demodulators 323 and 329 respectively. Bruckert further discloses that signals 342 and 343 are then demodulated into in-phase and quadrature phase components 344 and 345. It would have been obvious to one of ordinary skill in the art at the time of invention to use two demodulators to demodulate the outputs of the despreaders and extract the original signals and improve the channel estimation in the system that accounts for multi-path scattering of the received signals as well as accounting unequal receiver gains (see column 1, last paragraph) as suggested by Bruckert. Syrjarinne and Bruckert disclose all the subject matters claimed in claim 1, except that the first replica spreading code and the second replica spreading code are partially correlated. Schulz discloses a method and apparatus for controlling communications between a mobile cellular telephone and a cell of a cellular telephone network (see the abstract). Schulz further discloses that in a CDMA system each user's transmissions are modulated by a different pseudo-random number (PN) code to distinguish the user's logical channel,

wherein these PN codes are orthogonal or partially correlated, so that it is possible to identify the user channel based on an analysis of the PN codes used in the transmission (see column 1, last paragraph). Therefore, for the reasons stated above, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Syrjarinne and Bruckert as suggested by Schulz.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Syrjarinne, Bruckert, and Schulz, further in view of Sugita et al. (hereafter, referred as Sugita) (US 5,862,172).

As to claim 2, Syrjarinne discloses a communication system (see Fig. 1) comprising: a detection receiver (see block 1) for receiving a channel signal having a modulated carrier (see paragraphs 0001 and 0003) for communicating first messages (i.e. signals transmitted from a first transmitter have been interpreted as first messages) (i.e. an individual code for the first transmitter) and communicating second messages (i.e. signals transmitted from a second transmitter have been interpreted as second messages), the detection receiver comprising, a first replica spreading code generator providing a first replica spreading code (see the abstract and paragraphs 0001, 0004, 0007, and 0015), a second replica spreading code generator providing a second replica spreading code (see the abstract and paragraphs 0001, 0004, 0007, and 0015), a first despreader (see the abstract and paragraphs 0001, 0007, 0008, and 0015) for despreading the channel signal into a first despread signal, a second despreader (see the abstract and paragraphs 0001, 0007, 0008, and 0015) for despreading the channel signal into a second despread signal, a first power detector (see the abstract,

Art Unit: 2611

paragraphs 0015 and 0017) for detecting the power level of the first signal (i.e. determining signal level of each channel) for providing a first power signal, a second power detector (see the abstract, paragraphs 0015 and 0017) for detecting the power level of the second signal for providing a second power signal, a comparator for determining which one of the first or second power signal is present (see paragraphs 0036 and 0037), and a selector (see paragraph 0037) for selecting and providing the first signal when the first power signal is present or for selecting and providing the second signal when the second power signal is present, the first signal comes from the first transmitter (i.e. interpreted as the first signal contains the first message) when the first power signal is present, the second signal comes from the second transmitter (i.e. interpreted as the second signal contains the second message) when the second power signal is present. Syrjarinne discloses all the subject matters claimed in claim 1, except for having a first carrier demodulator for carrier demodulating the first despread signal into first quadrature signals, a second carrier demodulator for carrier demodulating the second despread into second quadrature signals. Bruckert, in the same field of endeavor, discloses a method for determining remote unit location in a communication system. Bruckert discloses a receiver comprising two receiving antennas (see Fig. 3, blocks 103 and 105), wherein signals 340 and 341 are input into despanders 321 and 327 respectively, where they are despread and output as despread signals 342 and 343 to demodulators 323 and 329 respectively. Bruckert further discloses that signals 342 and 343 are then demodulated into in-phase and quadrature phase components 344 and 345. It would have been obvious to one of ordinary skill in the art at the time of

invention to use two demodulators to demodulate the outputs of the despreaders and extract the original signal and improve the channel estimation in the system that accounts for multi-path scattering of the received signals as well as accounting unequal receiver gains (see column 1, last paragraph) as suggested by Bruckert. Syrjarinne and Bruckert disclose all the subject matters claimed in claim 2, except that the first replica spreading code and the second replica spreading code are partially correlated. Schulz discloses a method and apparatus for controlling communications between a mobile cellular telephone and a cell of a cellular telephone network (see the abstract). Schulz further discloses that in a CDMA system each user's transmissions are modulated by a different pseudo-random number (PN) code to distinguish the user's logical channel, wherein these PN codes are orthogonal or partially correlated, so that it is possible to identify the user channel based on an analysis of the PN codes used in the transmission (see column 1, last paragraph). Therefore, for the reasons stated above, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Syrjarinne and Bruckert as suggested by Schulz. Syrjarinne, Bruckert, and Schulz do not disclose that the system comprises a data source for providing the first message during a first time period when the first power signal is present and for providing the second message during a second time period when the second power signal is present and that the system further comprises a transmitter having a code generator for generating an original first spreading code and an original second spreading code; a spreader for spectrum spreading the first message by the original first spreading code and for spectrum spreading the second message by the original second spreading

Art Unit: 2611

code, the first replica spreading code being a replica of the original first spreading code, the second replica spreading code being a replica of the original second spreading code, the first message and second message are spectrum spread into first and second spread spectrum signals; and a transmitter for broadcasting the channel signal by modulating a carrier by the first spread spectrum signal during the first time period and by the second spread spectrum signal during the second time period. Sugita discloses a communication apparatus (see Fig. 3A), comprising a transmitter 21 (interpreted as a data source) for providing a first message during a first time period and for providing a second message during a second time period (see column 4, lines 57-65). Sugita further discloses that the transmitter comprises a code generator (see blocks 23 and 24) for generating an original first spreading code and an original second spreading code; a spreader (see block 4) for spectrum spreading the first message by the original first spreading code and for spectrum spreading the second message by the original second spreading code (see column 4, lines 57-65), wherein the first replica spreading code being a replica of the original first spreading code, the second replica spreading code being a replica of the original second spreading code (see column 5, last paragraph), the first message and second message are spectrum spread into first and second spread spectrum signals; and a transmitter for transmitting (could be interpreted as broadcasting) the channel signal by modulating a carrier by the first spread spectrum signal during the first time period and by the second spread spectrum signal during the second time period. It would have been obvious to one of ordinary skill in the art at the

time of invention to modify Syrjarinne, Bruckert, and Schulz as suggested by Sugita to improve the detection accuracy in a communication system (see column 2, lines 1-36).

Allowable Subject Matter

6. Claims 3, 4, and 6 allowed. The following is a statement of reasons for the indication of allowable subject matter: a comprehensive search of prior art of record failed to disclose, either alone or in combination, a communication system for broadcasting a channel signal, the system comprising: a detection receiver for receiving a channel signal having a modulated carrier for communicating first messages using a first spreading code and communicating second messages using a second spreading code; a transmitter for broadcasting the channel signal by modulating a carrier by the first spread spectrum signal during a first time period and by the second spread spectrum signal during the second time period, and a first code receiver for receiving the first message during the first time period, the system communicating to the detection receiver and to the first code receiver during the first time period, the system selectively communicating to the detection receiver and not the first code receiver during the second time period.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (US 5,111,478) (See column 9, first paragraph).

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leila Malek whose telephone number is 571-272-8731. The examiner can normally be reached on 9AM-5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Leila Malek
Examiner
Art Unit 2611

L.M


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER